

## CHAPTER 8 COMBAT SERVICE SUPPORT

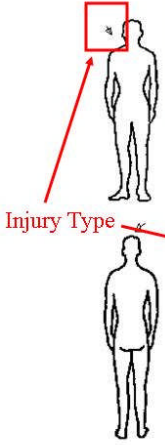
**8-1 GENERAL:** All BLUFOR units will observe restrictions and constraints on the routes received in Division orders and are not authorized to use any other routes to move personnel or supplies unless approved by the Commander, Operations Group or his designated representative and EXCON.

### 8-2 COMBAT HEALTH SUPPORT (CHS): a. MILES CASUALTY CARD (MCC):

1. All Soldiers participating in the rotation must have a MCC with an assigned Battle Roster Number (BRN). All MCC must have OC initials verifying that the safety briefing was received. Evacuation of civilian or role player casualties will be IAW the Law of Land warfare and unit SOP.

2. MCC Description Front: The front of the MCC has 3 pieces of information: 1) Soldier's administrative data, 2) The type of injury, and 3) The MCC Category. The OC and BLUFOR must read the front of the card and locate the evacuation category in the bottom right corner of the card. If there is nothing written in the MCC Category area the soldier is considered Wounded.

Admin Data / Battle Roster



CASUALTY CARD NO: 17	
NAME _____	
SSN _____	
GRADE _____	MOS/SSI _____
UNIT _____	
<input checked="" type="checkbox"/> SIMULATED	<input type="checkbox"/> CONSTRUCTIVE
<input checked="" type="checkbox"/> LITTER	<input type="checkbox"/> WALKING
<input checked="" type="checkbox"/> INJURY	<input type="checkbox"/> DISEASE
<div style="border: 1px solid red; padding: 5px; margin-top: 10px;"> <b>DIAGNOSIS</b>  Gunshot wound to top of head, glanding. </div>	
<div style="border: 1px solid green; padding: 5px; display: inline-block;"> <b>PRIORITY</b> </div> <div style="margin-left: 10px; color: green;"> <b>MCC Category</b> </div>	

INSTRUCTIONS ON REVERSE

HEADQUARTERS, DEPARTMENT OF THE ARMY  
GTA 8-11-14

3. MCC Description Back: The back of the MCC also has 3 pieces of information: 1) Instructions for the casualty, 2) Signs and symptoms for use by medical personnel, and 3) OC reference for whether the casualty requires a litter and is unconscious. (As denoted by a "L" for litter or "LU" for

**litter unconscious on the back of the MCC)** A casualty could be in the Urgent or Priority category and require a litter or be unconscious.

**CASUALTY:**  
You are unconscious  
Lie down  
You cannot walk/talk  
You cannot assist the unit in any way

**Casualty Instructions**

**MEDIC:**  
Moderate bleeding from scalp wound.  
Eyes are equal and reactive.  
Vomiting.

**Medical Signs & Symptoms**

LU

**O/C Instructions:**  
Casualty requires a litter "L"  
Casualty is unconscious "U"

4. MILES Casualty Cards fall into one of the following five categories.

#### (a) RTD (Return to Duty).

Soldiers with an RTD card must receive self or buddy aid and **do not necessarily require evacuation to a Medical Treatment Facility (MTF)**. RTD casualties may resume combat operations if an OC verifies that appropriate self/buddy aid has been rendered and both direct and indirect contact has been terminated in which the casualty was sustained. When the current contact has ended, the OC will re-key the soldier's MILES, issue a new MILES casualty card, and allow him or her to resume combat operations. Cross FLOT RTD Soldiers (scout/FO/sniper teams) may not start or resume operations from the location of the original contact. OCs, in conjunction with the chain of command, will identify a rally point not closer than 500 meters from the point of original contact where any RTDs wishing to resume operations must move to prior to continuing the mission.

#### (b) W (Wounded) (MCC

**Category blank).** Soldiers with a wounded card must receive proper treatment from qualified medical personnel that can demonstrate the proper procedure to treat the casualty and possesses the appropriate equipment and supplies. The soldier must be evacuated to an

echelon I or II medical treatment facility within 24 hours before being classified as Died on the Battlefield (DOB). They may be used to assist the unit, but only in a non-combat role, e.g. radio watch, litter bearer, commensurate with the injury.

(c) **Priority.** Soldiers with a priority casualty card must receive proper treatment from qualified medical personnel. In addition they must be treated by a battalion aid station Physician or Physician's Assistant and be evacuated to an Echelon II MTF (FSB Medical Company).

(d) **Urgent.** Soldiers with an urgent casualty card must receive proper treatment from qualified medical personnel. In addition They must be treated by a battalion aid station Physician or Physician's Assistant and be evacuated to an Echelon II MTF (FSB Medical Company).

(e) **KIA (Killed in Action).**

(1) Soldiers with a KIA card must assume the role of remains. They may not provide any information or assistance to the unit and must remain in place unless physically moved. Any movement by remains (e.g. going to the latrine or retrieving a rucksack) must have OC approval. All remains must be evacuated to the mortuary affairs collection point (MACP).

(2) **KIA, Remains not Found.**

Drivers and TC's that have the requirement to remain with their vehicles will receive a KIA, Remains not Found (KIA RNF) MCC. The adjudicating OC must annotate on the standard KIA MCC "RNF". These individuals will not be evacuated to the MACP. KIA-RNFs must be reported from TF S1 to the BCT Rear CP/ALOC. The S1/S4 section screens the report for accuracy and reports the loss to the BCT S1/S4 OC. If the report is correct, the OC will issue a KIA-RNF card to the S1/S4 section.

(f) **Body Armor:** Downgrading of wounds due to Flak Vest and Interceptor Body Armor (IBA). See Chapter 2, Paragraph 2-3 m.9.

(g) **NBC Casualties.** Any individual taking improper protective measures will be assessed as an NBC casualty. OCs may assess NBC casualties based on protective equipment failures. In addition, casualties will also be assessed in the downwind vapor hazard area for incorrect actions. There will be instances when both casualty cards will be in effect. See EXPRO Chapter 9, Paragraph 9-4 Casualty Assessment for NBC Casualties.

b. **MEDICAL EVACUATION.** All casualties requiring evacuation will be physically transported to the medical treatment facility manned and equipped to provide the appropriate level of care.

1. Casualty evacuation times are as follows: (includes NBC): All casualty evacuation times are based on categories (Urgent, Priority, and Wounded). The time allowed for evacuation starts at the point of injury. Times are not cumulative.

(a) Evacuation to Level I primary care provider (BAS):

**Urgent:** If treated by a combat lifesaver (CLS) or combat medic (CM) at the point of injury the casualty has 2 hours for evacuation. If not treated by CLS or CM at the point of injury, the casualty has 1 hour for evacuation. During first response the OC must annotate on the miles casualty card "CLS" or "CM" and the time treatment was rendered. Certified combat lifesaver's will be identified by having the CLS aid bag and appropriate class VIII materials available to provide treatment on the battlefield.

**Priority:** If treated by a combat lifesaver (CLS) or combat medic (CM) at the point of injury the casualty has 4 hours for evacuation. If not treated by CLS or CM at the point of injury, the casualty has 2 hour for evacuation. During first response the OC must annotate on the miles casualty card "CLS" or "CM" and the time treatment was rendered. Certified combat lifesaver's will be identified by having the CLS aid bag and appropriate Class VIII materiel available to provide treatment on the battlefield.

**Wounded:** Casualty has 24 hours to be treated at an Echelon I or II MTF from the point of injury. The casualty may proceed on his or her own to the nearest casualty collection point or Medical Treatment Facility (MTF), whichever is closest. Once the soldier has received treatment from a medical doctor or P.A., the medical OC will determine if the soldier requires further evacuation, if not, the OC will re-key the casualty, and return the soldier to duty. Wounded casualties may be reconstituted at the battalion aid station and returned to duty.

(b) **Evacuation from Level I primary care provider (BAS) to Level II (BSA)**

**Urgent:** After proper treatment at Echelon I MTF, the casualty has an additional 2 hours for evacuation to Echelon II care. Casualty's sustained in the Brigade Support Area will be held at the Forward Support Medical Company for a minimum of six hours.

**Priority:** After proper treatment at Echelon I, the casualty has an additional 4 hours for evacuation to Echelon II care. Priority casualties sustained by units in the Brigade Support Area will be held at the forward support medical company for a minimum of six hours.

**Wounded:** Wounded casualties are RTD after proper treatment at an Echelon I and do not require evacuation to Level II. Wounded casualties sustained by units in the Brigade Support Area will be held at the FSMC for a minimum of six hours.

2. Wounded in action personnel: WOUNDED, PRIORITY, and URGENT, excluding RETURN TO DUTY (RTD) will be evacuated IAW current doctrine. When litter casualties are transported by a non-standard evacuation vehicle instead of an ambulance, the casualties must be loaded and unloaded from the vehicle by use of a standard or improvised litter. Once loaded, they must sit in the vehicle troop seats (for safety purposes). All litter casualties will be loaded, unloaded, and manually carried in a standard or improvised litter during all MEDEVAC-related operations.

3. Non-standard vehicle loads will be limited to the number and type of casualties that could be realistically loaded without causing further injury to the casualties. At no time will Soldiers be placed in any situation that would compromise their safety.

4. Each casualty requiring transportation by litter must have a dedicated standard or improvised litter accompany them throughout their movement in the evacuation system. The unit may carry or drag litter casualties by one or two men but only to protected (covered) areas. The unit can use a one or two man carry to move a casualty in an emergency situation where litters are not available and vehicles cannot get to the patient. The OC will assess the casualty as a DOW casualty if the carry causes further injury.

5. Casualties transported in a vehicle that strikes a mine or is disabled in a direct or indirect fire engagement will have their MILES Casualty Card evacuation category upgraded one level. "Urgent" casualties will be reassessed as "KIA"; "Priority" casualties will be reassessed as "Urgent" casualties; "Wounded" casualties will be reassessed as "Priority" casualties. The initial time of injury will be maintained; only the severity of injury will change.

### JMRC Medical Evacuation Time Chart

<u>Category</u>	<u>To Echelon I</u>	<u>To Echelon II**</u>
RTD	N/A	N/A
WOUNDED	24 Hours	N/A
PRIORITY	2 (4 w/CLS/CM)	4 Hours
URGENT	1 (2 w/CLS/CM)	2 Hours

\* Time is doubled when casualty properly treated by qualified medical personnel.

\*\* Time from Treatment being rendered at Echelon I to arrival at Echelon II. Times are not cumulative.

#### c. **DIED ON THE BATTLEFIELD**

**(DOB):** Casualties, will be declared "Died on the Battlefield" (DOB) when any of the following cause death **PRIOR** to a casualty arriving at the BAS/FSMC:

1. The casualty receives improper medical treatment.
2. Improper transportation methods are utilized in an evacuation phase.
3. Casualty evacuation times are not met.
4. Casualties possess either a MCC or properly filled out DD1380 upon arrival.
5. After verifying, the MILES card is annotated with DOB, the OC will require the unit to transport these personnel back to the Mortuary Affairs Collection Point (MACP) Point located in the BSA.
6. Personnel who become DOB will not be available for release to the unit for a minimum of 24 hours. Soldiers who become DOB will not be available for reconstitution for a minimum of 24 hours from Point of Injury (POI).
7. DOBs must be evacuated to the Mortuary Affairs.

d. **DIED OF WOUNDS (DOW):** The above guidelines also will determine if a casualty is a DOW and apply the same as DOB. DOW terminology will only be used to identify the death of a wounded soldier AFTER arriving at the BAS. By doctrinal definition a soldier is not classified as a DOW unless death occurs after entering into the medical system.

#### e. **KIA/DOB/DOW EVACUATION:**

KIA/DOB/DOW assumes the role of remains and must be transported accordingly to the Mortuary Affairs section of the FSB.

1. KIAs (Excluding KIA,RNF casualties) are evacuated to Mortuary Affairs Collection Point (MACP). KIAs will be uploaded onto vehicles as remains and will utilize troop

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seats prior to vehicles being put into motion. Transporting personnel in trailers is prohibited. Soldiers will be transported IAW EXPRO Chapter 11, paragraph 11-3, b.

2. Personnel KIA in the BSA (FSB and Field Trains) will be held at the MACP an additional 12 hours, once all paperwork has been processed. This applies only to KIAs in BSA units and does not apply to units/personnel outside the BSA.

f. **TREATMENT AND SUPPLIES.** The BLUFOR unit must have the required medical supplies necessary to treat and sustain casualties during the treatment and evacuation process. These medical supplies must either be applied or, in some circumstances, simply accompany the casualty during evacuation. These "expended" medical supplies may be collected by the BLUFOR unit at the FSMC for packaging and resupplying medical units. It is a unit responsibility to requisition Class VIII medical supplies, as is required. The BLUEFOR unit is responsible for ALL aspects of managing Class VIII supplies.

f. **WIA/KIA SENSITIVE ITEMS.** It is the responsibility of the BLUFOR unit to account for all sensitive items. Sensitive items should remain under the control of the WIA/KIA Chain of Command and not be evacuated to the BSA.

### 8-3 PERSONNEL REPORTING/REPLACEMENT:

a. **GENERAL:** A DA Form 1156, Casualty Feeder Report, will be completely processed through personnel channels for all evacuated casualties IAW the unit's personnel actions SOP. No casualty replacement personnel will return to units until after DA Form 1156 and all other appropriate personnel requisition paperwork has been completely processed through the personnel replacement system.

b. **STRENGTH ACCOUNTABILITY.** The unit S1 will provide current personnel strength (battle roster) and task organization, face to face, to his/her counterpart OC prior to E1.

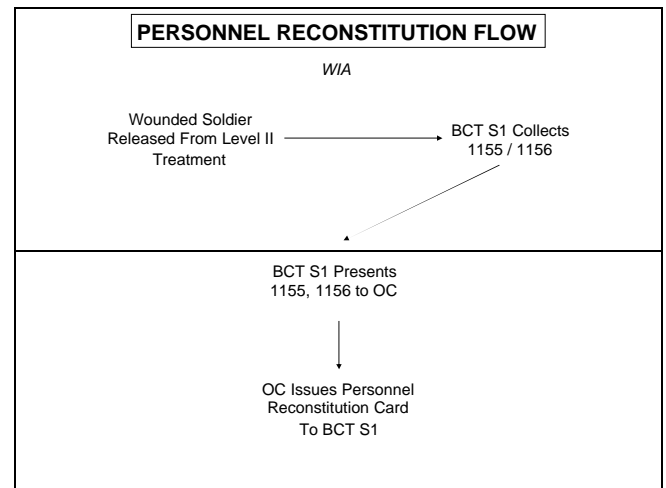
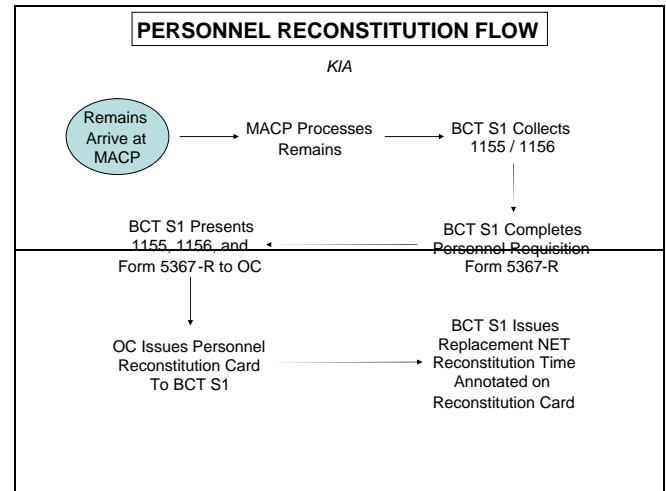
c. **CASUALTY REPORTING.** All units will report casualties to the BCT Administrative Logistics Operations Center (ALOC) IAW unit SOPs. The BCT ALOC will either be the actual BCT S1/S4 or a HICON representative.

#### d. **INDIVIDUAL RECONSTITUTION PROCEDURES.**

1. BCT and Forward Support Battalion available as "in the box" players.

(a) After processing through MACP or upon release from Level II Treatment (FSMC), Soldiers are available to be requested as replacements through the BCT S1 (ALOC).

(b) An OC at the BCT ALOC will rekey all replacement personnel individually, after the unit has correctly processed the PRR (DA Form 5367-R Part 2), and he/she has verified the MILES Casualty Card.



2. JMRC Role Player performing duty as the Brigade Headquarters, BCT TOC, and Forward Support Battalion NOT available as "in the box" players.

(a) All KIA and WIA Soldiers are evacuated to the Field Trains (KIA evacuated to the Mortuary Affairs point, as appropriate).

(b) Battalion/Task Force CTCF or FTCP reports casualty losses to the BCT TOP.

(c) BCT TOC receives casualty reports from the CTCP or FTCP. The BCT TOC screens the data for accuracy. A Maneuver OC Team Logistics OC picks up casualty reports at the BCT TOC at the following times: Change of Mission + 4, +7, and +10. The BCT TOC will contact the Maneuver OC Team Logistics OC if any additional casualties are reported after Change of Mission + 10.

(d) The FTCP forwards DA Forms 1155 and 1156 to the BCT TOC. DA Forms 1155 and 1156 are passed from the BCT TOC to a Maneuver OC Team Logistics OC.

3. JMRC Role Player performing duty as the Brigade Headquarters, BCT TOC, and Forward Support Battalion is available as “in the box” player.

(a) All KIA and WIA Soldiers are evacuated to the Forward Support Battalion (KIA evacuated to the Mortuary Affairs point, WIA evacuated to the FSMC).

(b) Battalion/Task Force CTCP or FTCP reports casualty losses to the BCT TOC.

(c) BCT TOC receives casualty reports from the CTCP or FTCP. The BCT TOC screens the data for accuracy. A Brigade OC Team Logistics OC picks up casualty reports at the BCT TOC at the following times: Change of Mission +4, +7, and +10. The BCT TOC will contact the Brigade OC Team Logistics OC if any additional casualties are reported after Change of Mission +10.

(d) The FTCP forwards DA Forms 1155 and 1156 to the BCT TOC. DA Forms 1155 and 1156 are passed from the BCT TOC to a Brigade OC Team Logistics OC.

(e) A Brigade OC at the ALOC/FSB TOC rekeys all replacement personnel, after verification of MILES casualty card and DA Form 1155/1156 data.

**e. UNIT RECONSTITUTION**

**PROCEDURES.** The Senior OC may determine, based on the tactical situation, that the unit or a portion thereof will be totally replaced (for example, the unit gets over-run). In this situation, the S1 or surviving unit representative completes a unit battle roster identifying those individuals that are accounted present for duty, WIA, or KIA, and those individuals on whom the status is unknown (MIA - all others). The roster is provided to the S1 OC for unit reconstitution. The S-4/BCT TOC must fully account for all vehicles.

**8-4 VEHICLES/MAINTENANCE:**

a. **General.** SAWE-RF/MILES II allows for five types of Battle Damage Assessments (BDA): catastrophic, mobility, cheat, commo, and firepower.

1. TF S4 requests replacement vehicles and equipment IAW unit SOP to the BDE S4 (if BDE Rear CP is “in the box”), or to the BCT TOC (if BDE Rear CP is not “in the box”).

2. TF S4 reports the combat loss to the Combat Trains OC with the following information: Co/Tm, vehicle Type, bumper # and time reported to BDE.

3 Destroyed vehicles remain in place until change of mission. At change of mission, OCs collect all destroyed vehicles and control their movements until reconstitution.

4. Combat load ammunition on board destroyed vehicles, will be considered serviceable, once the vehicle is rekeyed to reconstitution. Cross leveling to or from a destroyed vehicle awaiting rekey is not permitted. See Chapter 4, Paragraph 4-12.n for M109A6 and FAAS-V ammunition composition on WSRO vehicles.

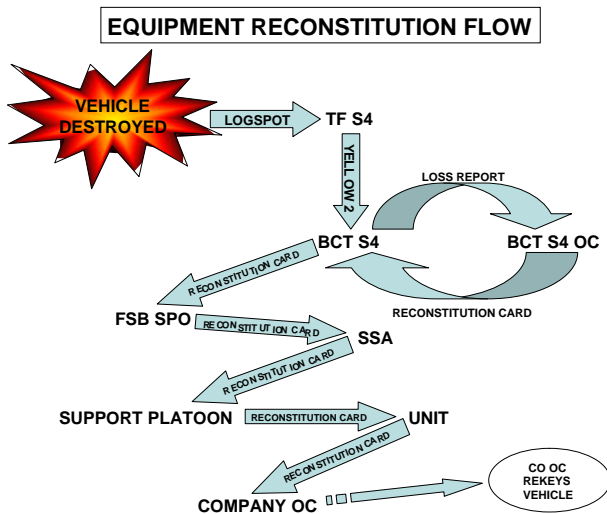
5. Equipment destroyed in the same Forward Operating Base as the FSB Supply Support Activity (SSA) will be reconstituted not earlier than 12 hours from the BCT S4 notification to the BCT S4 OC.

6. Vehicles/equipment that are destroyed after LD/Defend NLT will not be rekeyed any earlier than “COM

**7. When brigade headquarters and Forward Support Battalion is available as an “in the box” player:** The BDE S4 notifies the BDE S4 OC of loss with minimum of Battalion/Task Force, Vehicle Type and Time of Loss. the BDE S4 OC issues an initialed vehicle reconstitution card to the BDE S4. the BDE S4 gives the reconstitution card to the FSB SPO, who sends it to the FSB SSA, who ‘issues’ the card to the unit. The unit presents the card to the Co/Tm or Platoon OC who rekeys the equipment not earlier than the DTG of reconstitution annotated on the card.

**8. When JMRC Role Player performing duty as the Brigade Headquarters, BCT TOC, and Forward Support Battalion are NOT available as “in the box” player:** The TF S4 will send the request to the BCT TOC S4. The BCT TOC S4 will contact the TF Log OC and have him issue a replacement vehicle card to the TF S4. The TF S4 will complete the card and the TF Log OC will verify the information. The TF S4 will forward

the card to the appropriate platoon. Once the card is at the platoon the platoon OC will rekey the appropriate vehicle, once change of mission is called.



**9. When JMRC Role Player performing duty as the Brigade Headquarters, BCT TOC, and Forward Support Battalion is available as “in the box” player:** The TF S4 will send the request to the BCT S4. The BCT S4 will contact the Logistics OC in the BSA and have him issue a reconstitution card to the Support Operations Officer (SPO). The FSB SPO will pass the card to the FSB Supply Company. The Task Force supply representative will pick up the card from the FSB Supply Company and send the card to the appropriate platoon. Once the card is at the platoon, the platoon OC will rekey the appropriate vehicle, once change of mission is called.

## b. Equipment Reconstitution

## c. Simulated Battle Damage Assessment (SBDA).

1. SBDA is used to further activate the task force maintenance system. It monitors the procedural steps taken by the task force to return damaged vehicles to a serviceable status.

2. SAWE/MILES II generates four possible damage states when a system is successfully engaged by the enemy.

- (a) Commo kill.
- (b) Mobility kill.
- (c) Firepower kill.

(d) Catastrophic kill.

(e) A fifth condition is the "cheat kill" that occurs when the crew violates a restriction placed on them due to the first three categories. An SBDA card will assign fault symptoms and crew instructions for each damage state. Upon activation of the MILES system, the TC will open the envelope and activate the SBDA card, based on the type of kill assessed. Faults will be either organizational or DS level.

3. The vehicle TC utilizes training DA Form 2404. If the damage requires DS level repair, training DA Form 5504 or DA Form 2407 is used. Crews correctly complete the DA Form 2404, with the faults noted from the play card. Maintenance personnel correctly complete the DA Form 5504 or equivalent ULLS form with the appropriate faults and action required for submission to the Direct Support Maintenance Company. If parts are required, training DA Form 2765-1 is submitted. The DA Form 2765-1 replicates the part needed. Annotate "TRAINING" on all DA Forms 2765-1 used for repair of SBDA vehicles.

4. All repair parts coming to the player unit must be processed through the SSA located in the BSA.

5. If recovery/evacuation of the SBDA vehicle is necessary, the following conditions must be met:

(a) The recovery vehicle must have the appropriate equipment to recover the damaged vehicle, (i.e., tow bar and/or cables) IAW the appropriate -10 TM.

(b) Recovery may be accomplished by any vehicle capable of recovering the damaged vehicle IAW the -10s standards.

(c) Self-recovery is allowed if the assessed damage is appropriate (i.e., if the damage is a ramp on an M-113 or a turret traversing gear box on a tank, either vehicle can recover itself to the UMCP).

(d) If the vehicle requires recovery/evacuation for SBDA reasons, the recovery vehicle will attach required recovery equipment to the disabled vehicle in order to demonstrate serviceability of the required equipment and operator skill to recover the disabled vehicle IAW the -10 TM, at which point the OC on site will direct the vehicle to be unhooked. The damaged vehicle will follow the recovering vehicle, with the towing equipment on board, at a safe distance (approximately 50 m)



and at a safe towing speed (not to exceed 10 mph, except for M1 which is 5 mph).

(e) M-1 Tank Recovery.

(1) Per USAREUR Supplement to AR 750-1, M-1 tanks require a brake vehicle when being towed. Brake Vehicles can be either an M-88 or M-1.

(2) When using M-1s for vehicle recovery, do not allow the rear of the tow or brake vehicle to face the rear of the disabled tank. Also ensure that the M-1s have a heat shield in place to perform the recovery mission. Appropriate provisions of paragraph 3b. (5)(d), above, apply.

6. Repair time per the OC play card begins when:

(a) All forms are properly completed and processed.

(b) The appropriate mechanics are on site with the repair parts and Class IIIP supplies replicated by DA Forms 2765-1, required tools, technical manuals, assets, and any required lift. SBDA repair activities will include proper transportation assets for parts and necessary Class III (B) and /or Class III (P).

(c) Mechanics must remain on site for required repair time. *No maintenance will be conducted.*

7. Maintenance conducted on equipment belonging rotational units during Exercise Days must be performed in the maneuver box or maneuver coordination area. Once a vehicle is evacuated outside of the maneuver box or MCA, it cannot be returned to the exercise. This includes vehicles removed to cantonment areas or HTA motor pools.

8. All catastrophically destroyed vehicles conduct PMCS, NMC fault repair, rearm, and refuel before reconstitution. 'NMC repair' includes parts are ordered under a valid requisition, parts are on hand, necessary tools and POL are present, and a trained mechanic is present. 'Re-arm' includes a valid class V requisition and class V received and uploaded on the vehicle. 'Refuel' includes the vehicle having at least 7/8<sup>th</sup> of a tank of fuel. TF 07s can authorize units to perform administrative functions ICW COM instructions (i.e. battlefield police).

**9. Cross Leveling of Parts:**

Units have the option of "cross-leveling" parts between two SBDA vehicles with different faults. Similar to installing a SBDA part, the appropriate mechanics, tools, and manuals must be on-hand. The total time to cross level the part will be double the time listed in the repair time tables

on 8-8c. Once the cross leveling is complete, the gaining vehicle is considered FMC and the losing vehicle now has two SBDA's against it.

10. BLUFOR must execute repair IAW SBDA card and will not receive credit for SBDA repair by ordering an entirely new vehicle.

**d. Material/Maintenance Reporting**

1. Units will report their readiness status IAW their SOP. The unit Motor Officer / FSB SPO or representative will provide an updated copy of ULLS-G NMC Report or SAMS-2 AHN-O26 print to their OCs on a daily basis.

2. Brigade Maintenance Meetings. Units will report their readiness IAW SOP. The BDE S4/FSB SPO will provide a current copy of any reports and current combat system status to Logistics OCs at the BDE maintenance meeting.

**8-5 LOGISTICS/SUPPLY:**

a. **GENERAL:** In order to monitor the logistical effort of the task force, data on instrumentation coding, ammunition status, and task organization of vehicles is required.

b. **CL IX.** TFs/Separate Companies will provide a daily status of requisitions initiated to their respective OCs in a format that breaks down information by company team, by priority (02/03, 05/06, 12/13). Additionally, ULLS/SARSS CL IX reports may be required by OCs. The Supply Support Activity (SSA) will provide a daily status of all requisitions processed and passed to their respective OC in a format that breaks down the information by CO/TM by priority.

**c. INSTRUMENTATION CODING.**

Tracked vehicles and selected-wheeled vehicles will have an instrumentation package that electronically links the vehicle with the main computer. This package is called a PLAYER UNIT. The S4 will provide a PLAYER UNIT serial number, unit bumper number, and the vehicle function list (i.e., CTCP, primary BAS, 1st platoon leader, etc.) to the OC at initial link-up/safety briefing prior to move out for STX training. Vehicle bumper numbers are not changed after the vehicles pass through the instrumentation station.

d. **AMMUNITION STATUS.** Prior to the start of the ESX, the task force uploads its ammunition, both simulated rounds and paper replicated munitions. The upload of the initial Combat Basic Load (CBL) for the unit is

processed through the Ammunition Transfer Point (ATP) and transported by the unit IAW the EXPRO outlined in the following paragraphs.

1. The S4 or Support Platoon Leader provides the OCs with data pertaining to the total amount, by type, of ammunition allocated, issued, and the location of the ammunition. This is done in accordance with the unit basic load.

2. If an additional allocation of ammunition is issued to the unit, the S4 will provide the OCs with updated information as appropriate.

e. Task Organization Of Vehicles. The S4 provides data on the task organization and types of vehicles that are located within the task force. This chart is completed prior to deployment to the ESX.

## **8-6 AMMUNITION:**

### **a. AMMUNITION CONCEPT.**

1. The Division Ammunition Office (DAO) must sign for and draw the total ammunition allocation, to include Class IV and Class V barrier material, for all assigned, attached, and supporting units of the Brigade Combat Team (BCT) for the rotation.

2. The DAO will establish an ammunition holding area in the HTA CLASS IV yard to replicate the Corps Storage Area (CSA). The DAO will hand receipt for the storage area from HTA Base Operations and man the site from DISCOM or Corps assets with DAO supervision.

3. Additional allocations of ammunition can be requested for planned tactical operations as well as the requisition of ammunition for immediate consumption. These must be requested through operational channels and approved by the EXCON before ammunition is issued from the CSA.

4. All ammunition issued to the Brigade Combat Team, less mines, must flow through the FSB Ammunition Transfer Point (ATP). Ammunition resupply following the initial issue will be pushed from the CSA to the ATP, based on the CSR published in the Division OPORD. Units will secure and transport training ammunition IAW Army Materiel Command Tactical Vehicle Upload Plans and the unit SOP.

5. The DAO will issue ammunition to customers at the ATP, based on approved DA Forms 581 signed by the Brigade S4 or his designated representative.

### **b. PLANNING REQUIREMENTS / COORDINATION FOR AMMUNITION SUPPORT.**

1. BLUFOR and OPFOR will issue training ammunition in the form of simulators, ammunition containers, and paper ammunition. See Table H-4 for categories of ammunition corresponding to simulators and containers. Using units will use training ammunition (Blanks; Pyrotechnics; Flares; Smoke; Simulators INERT loaded projectiles, propellants, mines, simulated containerized weapon systems) and paper ammunition to replicate "live" ammunition. Units will draw blanks, pyrotechnics, smoke and simulator ammunition from ASP#2 and coordinate with the JMRC Training Support Division (TSD) for issues of INERT loaded projectiles, propellant, mines, containerized weapon systems and cartridges, and class IV materials.

2. Ammunition, simulators, containers, and other appropriate training devices will be stored at the CSA for eventual delivery or issue to using units in the form of a CSR or approved DA Form 581. Issue and turn-in procedures will be IAW the TSD SOP.

3. Units will be required to transport the training ammunition containers when rearming the Brigade with ammunition for which training containers are provided. The using units will furnish the necessary transportation, personnel, and MHE for handling of training ammunition containers.

4. TSD will issue paint to units to paint ATWESS and M30 Pyrotechnic rounds. Rounds will be appropriately painted with a dime size dot.

(a) ATWESS rounds must be color coded to differentiate between AT-4, JAVELIN, TOW, Chaparral, and Stinger rounds. ATWESS rounds are to be color coded at the CSA prior to issue or transport to the forward units. Any improperly color-coded ATWESS devices will automatically be assessed as DUDS and must be removed from the battlefield and returned to the CSA.

(b) The standard color codes are:

Color	Weapon System
Red	TOW Missile
Yellow	AT-4 Rocket
Green	JAVELIN Missile
Blue	Stinger Missile

**Table 8-1. ATWESS Color Codes.**



(c) When painting the ATWESS rounds, do not paint over the printed nomenclature and DODAC or the ends of the rounds. Place only one small dot of the proper color on the rear of the round. Black paint will be used only to paint over multiple colored rounds.

(d) M30 Pyrotechnic rounds for use with the Main Gun Signature Simulator (MGSS) must be color coded to differentiate between M1A1 main gun rounds and 155mm rounds for use on M109 systems. Any improperly colored or uncolored M30 rounds will be assessed as DUDS and must be removed from the battlefield and returned to the CSA.

<b>M30 Colors</b>	<b>Weapon System</b>
Red	M1 Main Gun Rounds
Green	M109 Howitzer Rounds

5. TSD will issue all paper ammunition to the DAO representative at the CSA. The DAO representative will then issue appropriate paper ammo and an accompanying DA Form 581 for all ammunition issues.

6. Ammunition boxes and training devices must be returned in the course of the ESX or at end of mission. Damaged boxes will be repaired by using units.

7. HTA Base Operations will inspect and clear the CSA prior to the Brigade (BLUFOR units) departing JMRC.

**c. AMMUNITION HANDLING.**

1. All training simulators (ATWESS and MGSS) devices and training ammunition containers must be treated as if they had the same weight and cube as the rounds that they represent. The appropriate transportation assets must be utilized to move ammunition during any resupply of ammunition (Tables 5, 6, & 7 to Chapter 8).

2. Using unit vehicles cannot exceed their carrying capacity (weight and cube) in moving ammunition (Tables 5, 6, & 7 to Chapter 8). Vehicles violating their carrying capacity will automatically receive a simulated battle damage (SBDA) assessment by the OCs. If the vehicle is considered to be catastrophically destroyed then the vehicle and its cargo must undergo complete replacement procedures before the cargo can be delivered. Units may send appropriate vehicles back to recover Class V if the unit desires.

3. When handling ammunition by hand, all ammunition must be handled by enough personnel to move it (e.g., a man who

can ordinarily lift only one tank main gun round is allowed to lift one MGSS Simulator).

Dismounted Soldiers may not carry more than one JAVELIN, one TOW, one Javelin, two AT-4s, or one Stinger ATWESS cartridge per person.

4. If material handling equipment (MHE) is not available, the vehicle will be hand loaded using a ratio of one-man-load per minute (e.g. it will take one man 60 minutes to load 60 rounds of 120 mm HEAT into a 2 1/2-ton truck).

**5. Main Gun Signature Simulator (MGSS) Loads.** Units will not exceed the basic load or current turret load authorized when loading M30 Pyrotechnic rounds into the MGSS. Regardless of the planned turret loads, M1 series vehicles will not exceed 40 rounds in the MGSS, T80 series vehicles will not exceed 45 rounds in the MGSS, M109 series vehicles will not exceed 39 rounds in the MGSS.

**d. DAO REPRESENTATIVE AND ATP PERSONNEL PROCEDURES.**

1. Issue approved ammunition (simulators, paper ammunition, training containers) that has been properly requested. DA Form 581 (Request for Issue or Turn-in of Ammunition) will be used for requisitioning all ammunition/explosives (simulators, paper ammunition, training containers) from the CSA or ATP.

2. Issue only properly color-coded ATWESS. The DAO representative is responsible for ensuring that ATWESS are properly color-coded prior to issue to the forward units.

3. Issue approved quantities of ammunition to the forward units when the forward units have the required number of vehicles, so as not to exceed their carrying capacity. The DAO representative is responsible for ensuring that using unit vehicles do not exceed their carrying capacity.

4. Ensure that using units return training ammunition containers. All training ammunition containers will be returned to the CSA regardless of the condition, and will not be turned in or disposed of except to the TSD.

5. When training ammunition containers are returned to the ATP on using unit vehicles, the containers must be downloaded or cross-loaded to an S&P for backhaul to the CSA before the using unit vehicle can be used for reload of ammunition.

6. Ensure that all ammunition handling is in compliance with the EXPRO.

**e. AMMUNITION INITIAL ISSUE AND RESUPPLY TO USING UNITS.**

1. For initial upload, units must account for and document ammunition down to Company/Team, specialty platoon, and attachment level by DA Form 5515-R or DA Form 581. If an audit trail is not established, the initial upload will not be allowed by the OC. NOTE: Initial issue should be 100% of ABL. Subsequent issue is based on unit CSR.

2. All resupplies above the initial upload must be conducted utilizing boxes, containers, and canisters that accompany the type ammunition and corresponding number of simulators. A complete resupply transaction will include:

- (a) Requisition (DA Form 581)
- (b) Re-supply containers.
- (c) Simulators or paper

ammunition.

- (d) Appropriate transportation.

3. Training containers will be used only for resupply during the ESX. Training containers will not be utilized for the supply of the initial issue ammunition for the unit prior to the start of the ESX (Day E-2).

**f. AMMUNITION STORAGE.**

1. 25-mm rounds over the 300 ready box capacity are stowed in canisters in proper location.

(a) TOW, JAVELIN, Javelin and AT-4 training rounds must be stowed in racks.

(b) Maximum of 7 rounds on M2 (combination JAVELIN and TOW).

(c) Maximum of 12 rounds on M3 (combination JAVELIN and TOW).

2. Stinger teams must carry boxes until rounds are fired.

3. The correct ATWESS weapon system must be utilized. Color-coding must be in effect; OCs will confiscate improperly utilized or improperly color-coded ammunition.

**g. TACTICAL AMMUNITION STORAGE AND CACHES:** Units that plan, resource and execute tactical storage of Class V, or Caches must insure the following is met:

1. An OC must observe the emplacement of BLUFOR Cache with appropriate methods.

2. BLUFOR must request the ammunition or use UBL.

3. The Cache will be replicated by inert ammunition, or paper ammunition in a

container replicating approximate size and weight of the cache at the cache site.

4. This does not apply to Bulk Storage or Cache Points as stated in Para 4-12.i.

5. Cache Destruction: BLUFOR and OPFOR may destroy Caches found in the box by notifying the covering OC. Units must have the appropriate means of destruction or wait the appropriate time to 'remove' the cache.

**8-7 ROM OPERATIONS:**

a. ROM operation will be conducted IAW the USAREUR ROM SOP.

b. All units/vehicles participating in ROM operations will move from the TAA to the RP along the TF route of march.

c. Any augmentation support (MSB or COSCOM Unit) for ROM operations must be safety briefed and have MILES.

d. All units/vehicles that fail to follow the TF route of march are subject to being returned to the TAA by an OC.

e. All fuel tankers will have a spill kit conforming to the 282<sup>nd</sup> BSB SOP for tactical refueling at the JMRC.

**8-8 AIR RESUPPLY.** Units may conduct aerial resupply missions with Air Force airlift or internal/attached rotary wing assets. The unit may use slingload, internal load, container delivery system (CDS), door bundles, or combat offload (COL) methods to deliver supplies.

a. **DESTROYED SUPPLIES.** All aerial resupply operations are tactical during execution. Any supplies, to include slingloads, that are carried in or on an AF or Army airlift platform that is destroyed are also destroyed. Both BLUFOR and OPFOR may engage and destroy air delivered supplies using appropriate means during or after delivery. OC's will mark destroyed supplies with white engineer tape encircling the bundle/supply container and emplacing a 5'x7' card annotated with "DESTROYED SUPPLIES" with the DTG of the destruction and the name/callsign of the OC who conducted the adjudication. OC's will ensure the supplies remain out of play.

b. **NOTIONAL CDS/COL OPERATIONS.** Aerial resupply may be executed using notional aircraft due to aircraft availability or weather constraints. Notional C-130's will be replicated by DSA or augmentation vehicles and controlled by the G4 and the DSA.

1. Notional aircraft will follow the air tasking order (ATO) times as closely as possible.

2. When executing notional airdrops, BLUFOR units must provide qualified DZ parties and set up the DZ ICW the survey in order to receive credit for the drop. Notional CDS must be packed and rigged appropriately and will be delivered to the point of impact and downloaded. Notional CDS vehicles and crews will be OC escorted to and from the DZ.

3. Notional COLs will be delivered to the STOL Strip turn around point. Player units are responsible for downloading supplies off of the 'aircraft'. COL vehicles will be escorted to and from the STOL Strip by OC's and will remain at the turn around point until download is complete. COL Vehicles may be interdicted by OPFOR elements during download of supply.

4. In the case of training CDS bundles built by AF personnel and dropped in actual resupply operations, BLUFOR DZ party must successfully recover the training CDS bundle before receiving credit (in the case of paper ammunition) or the actual supplies (MREs, water, etc). If OPFOR successfully destroys the training bundle upon delivery, BLUFOR will not receive credit for the supplies it contained.

Table 8-4. Ammunition Categories			
Category	How Replicated	Type Ammo	Simulator
A	Containers with simulators	120mm/125mm Tank	M30 Pyrotechnic
		TOW	ATWESS
		155 mm Arty	M30 Pyrotechnic
		JAVELIN	ATWESS
		Stinger	ATWESS
		Viper	ATWESS
		105mm Arty	Shotgun shell
B	Containers with Training Devices	Javelin	HG SIMULATOR
		81mm Mortar	Inert Round
		60mm Mortar	Inert Round
C	Containers with Paper	20mm	Paper
		25mm	Paper
		30mm	Paper
		Mortar	Paper
		MICLIC	Paper
		105mm/155 mm Arty Powder	Paper
D	Containers with Blank Ammunition	5.56mm	Blank
		7.62mm	Blank
		.50	Blank
E	Paper Ammunition	120mm Mortar	
		Demo Kits	
		Bangalore Mines	

VEHICLE REPLACEMENT CARD

UNIT: \_\_\_\_\_

\_\_\_\_\_

VEHICLE  
TYPE: \_\_\_\_\_

\_\_\_\_\_

OC  
CERTIFICATION: \_\_\_\_\_

Figure 8-1. Vehicle Replacement Card

**Table 8-5. Ammunition Weights (Round/Box).**

Type Ammo	Rds/Box	Wt/Rd (lbs.)	Wt/Box (lbs.)
20mm	100	1	93
25mm	50	2	50
Viper	12	9	117
Stinger	1	35	89
JAVELIN	1	67	67
TOW	1	97	97
60mm Mortar	10	4.5	49
81mm Mortar	3	17	51
120mm Mortar	1	67	67
165mm (CEV)	1	94	94
MICLIC	1	200	200
120mm (Tank)	1	63	63
2.75 RKT MPSM	4	40	160
2.75 RKT HE	4	35	140
2.75 RKT SMK	4	35	140
2.75 RKT ILLUM	4	44	176
Hellfire	1	185	185
Javelin	1	35	50
105mm HE	2	39.8	79.6
155mm HE	N/A	95	N/A

**Table 8-6. Ammunition Weight (Boxes/Pallets)**

Type Ammo	Boxes/Pallet	Wt/Box or Missile	Wt/Pallet
20mm	27	50 lbs.	1350 lbs.
25mm	24	90 lbs.	2160 lbs.
120mm	30	69.9 lbs.	2049 lbs.
4.2 wooden box	20	70 lbs.	1400 lbs.
105mm	32	64 lbs.	2048 lbs.
TOW	12	89 lbs.	1068 lbs.
JAVELIN	9	67 lbs.	603 lbs.
Stinger	9	83 lbs.	749 lbs.
AT-4/Viper (5 per container)	4	112 lbs.	448 lbs.
2.75 RKT MPSM	15	160 lbs.	2400 lbs.
2.75 RKT HE	15	140 lbs.	2100 lbs.
2.75 RKT SMK	15	140 lbs.	2100 lbs.
2.75 RKT ILLUM	15	176 lbs.	2640 lbs.
Hellfire	9	185 lbs.	1665 lbs.
Javelin	9	50 lbs.	450 lbs.

## CHAPTER 8 COMBAT SERVICE SUPPORT

The following tables are provided as planning guide only. Table data is based on FM 101-10-1. Actual amounts of upload will vary by loading configuration, and actual weights and cubes of different ammunition types.

Ammunition Type	# Pallets				
	2-½ Ton	5 Ton	10 Ton	½ Ton Trail er	22-½ Ton
1-(W) 120mm APDS-T	2	4	8	14	16
1-(M) 120mm APDS-T	2	4	8	14	16
1-(W) 120mm HEAT	2	4	8	14	16
1-(M) 120mm HEAT	2	4	8	14	16
1-105mm APDS-T	2	4	8	14	16
2-105mm HEAT	2	4	8	14	16
1-TOW	2	4	8	14	16
1-JAVELIN	2	4	8	14	16
1-Stinger	2	2	8	14	16
5-AT-4 (Viper)	2	4	8	14	16
100-20mm	3	4	8	14	16
30-25mm	3	4	8	14	16
2-4.2 HE	3	4	8	14	16
2-4.2 ILL	3	4	8	14	16
2-4.2 WP	3	4	8	14	16
M21 Mine	4	4	8	14	16
M15 Mine	4	4	8	14	16
M14 Mine	4	4	8	14	16
M62 Mine	4	4	8	14	16
2.75 RKT MPSM	1	2	4	0	10
2.75 RKT HE	2	3	6	0	14
2.75 RKT SMK	2	3	6	0	14
2.75 RKT ILLUM	2	3	6	0	14
Hellfire	1	2	4	0	7
30mm	6	6	8	0	12
Javelin	2	4	8	14	16

**Table 8-7. Vehicle Carrying Capacity.**

## CHAPTER 8 COMBAT SERVICE SUPPORT

**8-8 SBDA Repair Charts.** The following SBDA charts are based on the applicable TM

Maintenance Allocation Charts (repair time is in hours):

<b>M1/M1A1 MOBILITY KILL</b>		
<b>PART REPLACED</b>	<b>LEVEL</b>	<b>REPAIR TIME</b>
<b>ENGINE:</b>		
Engine	DS	6.8
Power Pack	ORG	5.4
Compressor Assy Fwd Eng Mod	DS	6.0
Regenerator Assy Rear Eng Mod	DS	6.4
Rear Engine Subassembly	DS	8.2
Engine Oil Pump	ORG	7.3
<b>FUEL SYSTEM:</b>		
Main Fuel Control	ORG	1.0
Pump and Manifold Assy	ORG	1.3
Fuel Transfer Pump	ORG	1.4
<b>COOLING SYSTEM:</b>		
Fan and Drive Unit Left Hand	ORG	9.0
<b>ELECTRICAL SYSTEM:</b>		
Generator	ORG	1.5
Starter	ORG	0.7
Wiring Harness Branched 2W104	ORG	3.3
Batteries Storage	ORG	0.7
Power Cable Assy 2W103-9	ORG	2.5
<b>TRANSMISSION:</b>		
Transmission	ORG	13.2
Housing Oil Filter	DS	2.7
<b>FINAL DRIVE:</b>		
Final Drive Assembly	ORG	4.7
Shaft Assembly	DS	1.0
<b>SUSPENSION:</b>		
Roller Track Support Wheel	ORG	2.0
Track Assembly	ORG	3.4
Sprocket	ORG	5.8

<b>M1/M1A1 FIREPOWER KILL</b>		
<b>TURRET</b>	<b>LEVEL</b>	<b>REPAIR TIME</b>
Gunner's Primary Sight Assy	ORG	6.0
Cdr's Control Assy	ORG	0.4
Gunner's Control Assy	ORG	0.4
Gun Tube	DS	3.9
Breech	DS	10.7
Gun Mount Rotor	DS	31.0
Tank Commander's Panel	ORG	0.4



<b>M2, M2ODS, M3, M3A1 MOBILITY KILL</b>		
<b>PART REPLACED</b>	<b>LEVEL</b>	<b>REPAIR TIME</b>
<b>ENGINE:</b>		
Engine	DS	7.8
Turbocharger	ORG	6.2
Flywheel	DS	2.5
Engine Oil Cooler	ORG	10.1
Air Cleaner	ORG	7.9
<b>FUEL SYSTEM:</b>		
Fuel Pump	DS	1.0
Fuel Injector	DS	2.4
Fuel Separator	ORG	1.0
Cylinder Head Diesel	DS	6.1
<b>COOLING SYSTEM:</b>		
Radiator	ORG	7.4
<b>ELECTRICAL SYSTEM</b>		
Power takeoff Cable Xmission	ORG	5.4
Alternator	ORG	1.4
Generator & Harness Assy	ORG	0.6
Cable Assy 3W2	ORG	1.0
Battery Storage	ORG	2.5
Starter	ORG	1.9
Wire Harness 1W18 Cable	ORG	3.6
Wire Harness 1W17 Cable	ORG	7.3
<b>TRANSFERS &amp; FINAL DRIVES:</b>		
Final Drive Assy	ORG	4.6
<b>HULL &amp; SUSPENSION</b>		
Drive Sprocket	ORG	2.4
Idler Arm Assy	ORG	2.6

<b>M2, M2ODS, M3, M3A1 FIREPOWER KILL</b>		
<b>PARTS REPLACED</b>	<b>LEVEL</b>	<b>REPAIR TIME</b>
<b>TOW:</b>		
TOW Elevation Servo Amp	DS	1.0
Launcher Assy	DS	1.3
Board-Ear Assy	DS	2.6
Elevation Drive Motor	ORG	3.2
Cable Assy 2W134	ORG	3.9
Integrated Sight	DS	2.2
Armament Control Unit	DS	0.7
TOW Control Box	ORG	1.9
Basic Sight Assy	DS	3.8
TOW elevation Drive Gearbox	ORG	9.3
<b>25MM:</b>		
Ammunition Can Assy 25MM	DS	8.7
Chute Assy 25MM AP & HE	ORG	0.3
<b>TURRET:</b>		
Mechanical Scanner Assy	DS	3.8

<b>M109A6 Howitzer MOBILITY KILL</b>		
<b>PART REPLACED</b>	<b>LEVEL</b>	<b>REPAIR TIME</b>
<b>ENGINE:</b>		
Engine	DS	8.0
Oil filter	ORG	0.5
Cylinder Head	DS	2.8
Vibration Damper	DS	0.5
Valves	DS	1.0
<b>FUEL SYSTEM:</b>		
Fuel Pump	ORG	1.0
Fuel Tank	DS	10.0
Injector Pump	ORG	0.2
Injector Fuel	DS	0.2
<b>ELECTRICAL SYSTEM</b>		
Starter Relay	ORG	0.2
Starter	ORG	1.0
Wiring Harness, Bulkhead	DS	2.0
Wiring Harness, Power Lead	DS	2.0
<b>TRANSMISSION:</b>		
Shifter Linkage	ORG	3.6
Transmission Assembly	DS	5.0
<b>FINAL DRIVE:</b>		
Transfer	DS	1.0
Final Drive Assembly	ORG	2.5
<b>SUSPENSION:</b>		
Arm and Hub Assembly, Road Wheel	ORG	1.0
Idler Arm	ORG	1.0
Torsion Bar	ORG	1.0

<b>M109A6 Howitzer FIREPOWER KILL</b>		
<b>PARTS REPLACED</b>	<b>LEVEL</b>	<b>REPAIR TIME</b>
<b>TURRET:</b>		
Circuit Breaker	ORG	0.3
Bypass Valve Assembly	ORG	0.5
breach Mechanism	DS	6.0
Tube Assembly	DS	1.0

<b>M113 Series (M113A2, M557, M1064, M981) MOBILITY KILL</b>		
<b>PARTS REPLACED</b>	<b>LEVEL</b>	<b>REPAIR TIME</b>
<b>ENGINE:</b>		
Engine	DS	12.6
Head Cylinder	DS	6.5
Flywheel	DS	10.8
Rocker Arm	DS	7.6
<b>FUEL SYSTEM:</b>		
Fuel Pump Engine	DS	0.9
Fuel tank	ORG	1.0
Cross Shaft Assy	ORG	0.5

<b>M113 Series (M113A2, M557, M1064, M981) MOBILITY KILL</b>		
<b>PARTS REPLACED</b>	<b>LEVEL</b>	<b>REPAIR TIME</b>
<b>COOLING SYSTEM:</b>		
Radiator	ORG	3.0
Coolant Pump	ORG	1.2
<b>ELECTRICAL SYSTEM:</b>		
Generator	ORG	1.2
Wiring Harness	DS	3.5
Battery	ORG	0.5
<b>TRANSMISSION:</b>		
Transmission Assy	DS	10.0
<b>TRANSFERS:</b>		
Transfer Gearcase	DS	12.4
<b>DIFFERENTIAL:</b>		
Final Drive	ORG	1.6
<b>SUSPENSION:</b>		
Torsion Bar	ORG	0.9
Idler Wheel	ORG	2.3
Drive Sprocket	ORG	0.5

<b>M981 FISTV FIREPOWER KILL</b>		
<b>PARTS REPLACED</b>	<b>LEVEL</b>	<b>REPAIR TIME</b>
Wiring Harness Branched: Turret W1	DS	8.0
G/VLLD Carrier Assy	ORG	1.5
Accumulator Hydraulic	ORG	3.0
Motor, Hydraulic	ORG	1.5
Erection Arm Assy	DS	27.0
Chain Components, Erection Arm	ORG	4.0

<b>M998 Series MOBILITY KILL</b>		
<b>PART REPLACED</b>	<b>LEVEL</b>	<b>REPAIR TIME</b>
<b>ENGINE:</b>		
Engine	DS	9.0
Fly Wheel	DS	3.5
Oil Cooler Assy and Liners	ORG	2.3
<b>COOLING SYSTEM:</b>		
Water Pump	DS	3.5
Cooling System Complete	ORG/D S	18.9/3.5
<b>ELECTRICAL SYSTEM:</b>		
Starter	ORG	1.9
Battery & Cables	ORG	2.4
Wiring Harness Body	DS	3.5
<b>TRANSMISSION:</b>		
Transmission Assy	DS	5.8
<b>FRONT &amp; REAR AXLE:</b>		
Halfshaft	ORG	2.2
Differential Assy	DS	5.0

<b>M998 Series MOBILITY KILL</b>		
<b>PART REPLACED</b>	<b>LEVEL</b>	<b>REPAIR TIME</b>
Ball Joint Upper & Lower	ORG	0.6
<b>BRAKES/WHEELS/STEERING COLUMN/FRAME:</b>		
Master Cylinder	ORG	0.5
Pads Front & Rear	ORG	1.0
Rotor Front & Rear	ORG	1.2
Steering Column	ORG	1.8
Power Steering Pump	ORG	1.0
Crossmembers, Brackets&Supports	DS	4.5